In the Claims

1.   (Previously presented) A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

allocate a portion of the available bandwidth as the allocated bandwidth based on the provisioned parameters; and

adjust the effective power spectrum to correspond with the allocated bandwidth.

2.   (Currently amended) The communications device of Claim 1, wherein ~~the line~~ the xDSL link comprises a twisted pair line forming a local loop coupled to customer premises equipment.

3.   (Original) The communications device of Claim 1, wherein:

the trained parameters comprise an upstream frequency bandwidth, an upstream margin, a downstream frequency bandwidth, and a downstream margin; and

the available bandwidth comprises the downstream frequency bandwidth.

4.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth using a discrete multi-tone (DMT) protocol, wherein the digital engine assigns the bits of data to a plurality of low frequency bins;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

allocate a portion of the available bandwidth as the allocated bandwidth based on the provisioned parameters, wherein the allocated bandwidth comprises a frequency range corresponding to ~~the low frequency bins, wherein the low frequency bins~~ the plurality of low frequency bins, wherein the plurality of low frequency bins provide data throughput equal to or greater than the provisioned parameters; and

adjust the effective power spectrum to correspond with the allocated bandwidth.

5.　　(Previously presented) A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth using a carrierless amplitude and phase modulation (CAP) protocol;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

allocate a portion of the available bandwidth as the allocated bandwidth based on the provisioned parameters, wherein the allocated bandwidth comprises a baud rate providing data throughput equal to or greater than the provisioned parameters; and

adjust the effective power spectrum to correspond with the allocated bandwidth.

6.　　(Canceled)

7.　　(Previously presented) A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data, wherein the line driver comprises an amplifier having a feedback loop with a variable complex impedance;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

allocate a portion of the available bandwidth as the allocated bandwidth based on the provisioned parameters; and

adjust the effective power spectrum to correspond with the allocated bandwidth by adjusting a real and an imaginary portion of the variable complex impedance.

8.   (Original) The communications device of Claim 1, wherein the controller adjusts the effective power spectrum to correspond with the allocated bandwidth by selecting an alternative voltage supply level for the line driver.

9.   (Previously presented) A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

allocate a portion of the available bandwidth as the allocated bandwidth based on the provisioned parameters;

adjust the effective power spectrum to correspond with the allocated bandwidth;

detect a period of reduced activity, wherein a required bandwidth during the period of reduced activity is less than the allocated bandwidth;

reduce the allocated bandwidth; and

adjust the effective power spectrum to correspond with the reduced allocated bandwidth.

10.   (Currently amended) A method for reducing power consumption on a digital subscriber line (xDSL) link, comprising:

training the xDSL link;

determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determining provisioned parameters of the xDSL link;

allocating a portion of the available bandwidth ~~for xDSL communications~~ <u>for the xDSL link</u> based on the provisioned parameters; and

adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

11.   (Original) The method of Claim 10, wherein the available bandwidth comprises a downstream frequency bandwidth.

12.   (Canceled)

13.   (Currently amended) A method for reducing power consumption on a digital subscriber line (xDSL) link, comprising:

training the xDSL link;

determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determining provisioned parameters of the xDSL link;

allocating a portion of the available bandwidth ~~for xDSL communications~~ <u>for the xDSL link</u> based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises low frequency bins of the available bandwidth for communicating data using a discrete multi-tone (DMT) communications protocol; and

adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

14.   (Currently amended) A method for reducing power consumption on a digital subscriber line (xDSL) link, comprising:

training the xDSL link;

determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determining provisioned parameters of the xDSL link;

allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises an assigned baud rate for communicating data using a carrierless amplitude and phase modulation (CAP) protocol, wherein the assigned baud rate is less than a maximum available baud rate given the available bandwidth; and

adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

15.   (Currently amended) A method for reducing power consumption on a digital subscriber line (xDSL) link, comprising:

training the xDSL link;

determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determining provisioned parameters of the xDSL link;

allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth, wherein adjusting the analog characteristics of the line driver comprises reducing a frequency cutoff of the line driver to correspond to a high end frequency of the allocated portion of the available bandwidth.

16.   (Currently amended) A method for reducing power consumption on a digital subscriber line (xDSL) link, comprising:

training the xDSL link;

determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determining provisioned parameters of the xDSL link;

allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth, wherein adjusting the analog characteristics of the line driver comprises adjusting a real and an imaginary portion of a variable complex impedance feedback loop of the line driver.

17.   (Previously presented) The method of Claim 10, wherein adjusting the analog characteristics of the line driver comprises selecting an alternative voltage supply level for the line driver.

18.   (Previously presented) Software for reducing power consumption on a digital subscriber line (xDSL) link, the software embodied on a computer readable medium and operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determine provisioned parameters of the xDSL link;

allocate a portion of the available bandwidth for xDSL communications based on the provisioned parameters; and

adjust analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

19.   (Original) The software of Claim 18, wherein the available bandwidth comprises a downstream frequency bandwidth.

20.   (Canceled)

21.   (Currently amended) Software for reducing power consumption on a digital subscriber line (xDSL) link, the software embodied on a computer readable medium and operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determine provisioned parameters of the xDSL link;

allocate a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises low frequency bins of the available bandwidth for communicating data using a discrete multi-tone (DMT) communications protocol; and

adjust analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

22.   (Currently amended) Software for reducing power consumption on a digital subscriber line (xDSL) link, the software embodied on a computer readable medium and operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determine provisioned parameters of the xDSL link;

allocate a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises an assigned baud rate for communicating data using a carrierless amplitude and phase modulation (CAP) protocol, wherein the assigned baud rate is less than a maximum available baud ~~rate given~~ rate of the available bandwidth; and

adjust analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

23.   (Currently amended) Software for reducing power consumption on a digital subscriber line (xDSL) link, the software embodied on a computer readable medium and operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determine provisioned parameters of the xDSL link;

allocate a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

adjust analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth by reducing a frequency cutoff of the line driver to correspond to a high end frequency of the allocated portion of the available bandwidth.

24.   (Currently amended) Software for reducing power consumption on a digital subscriber line (xDSL) link, the software embodied on a computer readable medium and operable to:

determine trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

determine provisioned parameters of the xDSL link;

allocate a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

adjust analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth by adjusting a real and an imaginary portion of a variable complex impedance feedback loop of the line driver.

25.   (Original) The software of Claim 18, further operable to adjust the analog characteristics of the line driver by selecting an alternative voltage supply level for the line driver.

26.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

means for training the xDSL link;

means for determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

means for determining provisioned parameters of the xDSL link;

means for allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

means for adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

27.   (Original) The communications device of Claim 26, wherein the available bandwidth comprises a downstream frequency bandwidth.

28.   (Canceled)

29.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

means for training ~~the xDSL~~ a xDSL link;

means for determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

means for determining provisioned parameters of the xDSL link;

means for allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises low frequency bins of the available bandwidth for communicating data using a discrete multi-tone (DMT) communications protocol; and

means for adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth. .

30.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

means for training ~~the xDSL~~ a xDSL link;

means for determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

means for determining provisioned parameters of the xDSL link;

means for allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters, wherein the allocated portion of the available bandwidth comprises an assigned baud rate for communicating data using a carrierless amplitude and phase modulation (CAP) protocol, wherein the assigned baud rate is less than a maximum available baud ~~rate given~~ rate of the available bandwidth; and

means for adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.

31.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

means for training ~~the xDSL~~ a xDSL link;

means for determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

means for determining provisioned parameters of the xDSL link;

means for allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

means for adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth, wherein the means for adjusting the analog characteristics of the line driver comprises means for reducing a frequency cutoff of the line driver to correspond to a high end frequency of the allocated portion of the available bandwidth.

32.   (Currently amended) A digital subscriber line (xDSL) communications device comprising:

means for training ~~the xDSL~~ a xDSL link;

means for determining trained parameters of the xDSL link, wherein the trained parameters comprise an available bandwidth;

means for determining provisioned parameters of the xDSL link;

means for allocating a portion of the available bandwidth ~~for xDSL communications~~ for the xDSL link based on the provisioned parameters; and

means for adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth, wherein the means for ~~adjusting analog~~ adjusting the analog characteristics of the line driver comprises means for adjusting a real and an imaginary portion of a variable complex impedance feedback loop of the line driver.

33.   (Original) The communications device of Claim 26, wherein the means for adjusting analog characteristics of the line driver comprises means for selecting an alternative voltage supply level for the line driver.

34.   (Previously presented) The communications device of Claim 1, wherein the controller adjusts the effective power spectrum by reducing a frequency cutoff of the line driver.

35.   (Previously presented) The method of Claim 10, wherein the allocated portion of the available bandwidth comprises a low frequency portion of the available bandwidth.

36.   (Previously presented) The software of Claim 18, wherein the allocated portion of the available bandwidth comprises a low frequency portion of the available bandwidth.

37.   (Previously presented) The communications device of Claim 26, wherein the allocated portion of the available bandwidth comprises a low frequency portion of the available bandwidth.